

DRILLING PLAN

Revised March 29, 2011

OVERVIEW

This Exploration Project will occur in an area of previous exploration and prospecting. Activity in the area dates back to the 1850's with coredrilling occurring as early as the 1920's with as many as 100 recorded sites. This new activity will serve to supplement the pre-existing data to gain a better understanding of the deposit.

This Exploration Project will consist of the drilling of 8 holes. The drilling method will use hollow center wireline corehole techniques. The drilling method will use BTW size coring tools which will drill a 2.36 inch diameter hole. The rock sample will be 1.654 inch diameter. The rock samples will be collected and analyses will be performed offsite.

The drillholes will be drilled through the Ironwood-Iron Formation on an angle near perpendicular to the bedding. The Ironwood –Iron Formation dips at 60 to 70 degrees from the horizontal in a north by northwest direction. The Ironwood –Iron Formation is a sedimentary rock formation of Paleoproterozoic age.

SITING

The project site is located in Ashland and Iron Counties of Wisconsin. The project area has been commercially forested and existing roads will be used to access the drilling sites as well as serving as locations for the drilling sites.

The drilling contractor will use compact core drilling machines to fit the size constraints of the existing roads. It is not proposed to create new roads for accessing the drilling project.

The drill sites will each be approximately 50 feet by 25 feet in size.

Site preparation would include stockpiling any topsoil material from the drill site area. Since the sites are located on existing disturbances, it is anticipated that no topsoil will be encountered. The site will be provided with grading and drainage control as described below.

DRAINAGE CONTROL

An 80 cubic foot capacity Sedimentation Sump will be excavated in soil. The sump will serve as sedimentation control for the drilling activity. All surface runoff occurring within the drilling site will be directed into the sump. Also, surface runoff will be diverted away from the drillsite by the use of berms, hay bale dikes and/or ditches. This activity will allow for a controlled work area for any surface runoff to be directed into sedimentation control before leaving the drillsite. See sketch for conceptual detail.

METHOD

The surface soils will be drilled to the top of bedrock. A steel pipe casing will be installed into the bedrock to serve as a surface casing. The hollow center drill bit and drill steel is inserted through the larger diameter surface casing to access the bedrock. Drill water is pumped through the center of the drill steel to cool and lubricate the drill bit. Rock cuttings are flushed out between the outside of the drill steel and the bedrock. A rock core sample remains in the interior of the drill steel and is removed by wireline methods.

Rock samples collected from the drilling will be catalogued and boxed on site. The samples and boxes will be moved offsite for further processing.

The water used to flush the cuttings will be directed into the sedimentation sump. Water from the sedimentation sump will be reused to flush cuttings from the borehole. Additional water will be added to the closed loop system as the hole is advanced. At the end of drilling, the drill water in the sump will be allowed to clarify before disposal. Drill cuttings would be collected for additional analytical work.

No drilling additives or muds are proposed to be used in this project.

An option to using the sedimentation sump as a water source would be a tanked system to collect the drill water and cuttings. At the end of drilling, the tanks would be removed to a central location to empty the cuttings and drill water. The drill water would be placed into a sump and allowed to clarify before disposal. The cuttings would be collected for additional analytical work.

WATER SOURCE

From Wisconsin NR141.15, drilling water must be from a known safe source free of bacterial and chemical contamination. Also, the source of the water must be reported. In as much, the following options are proposed:

The proposed water source could originate from municipal supplies, local wells or surface waters.

- Any municipal water supply used will meet drinking water standards and the water would be trucked to the site.
- Any local well supply used will be chlorinated prior to use to eliminate bacteria. The treated water will be contained for a minimum of 1 hour to allow the chlorination to act before being used as drilling fluid.
- Surface water supply must be free of extraneous material and chlorinated to eliminate bacteria. The treated water will be contained for a minimum of 1 hour to allow the chlorination to act before being used as drilling fluid.

Water can be purchased from the municipal water system at the City of Mellen. This system would use a highway licensed water truck to bring the water to the project.

Surface Water can be obtained from either Ballou Creek or Tyler's Fork. On Ballou Creek, an existing bridge would be used to access the stream. On Tyler's Fork, Moore Park Road has access to the water's edge. Temporary pumps will be used for withdrawing water as needed. If dry conditions are encountered to where the water withdraw would impact the stream flow, water can be obtained from local municipal sources. If surface water is used, consultation and permitting with DNR on withdrawal procedures will be followed.

A water truck will be used or water lines will be installed from the water intake to the drilling sites. The determination of the method of water transport will be made to best fit the circumstances.

ABANDONMENT PLAN

All drillholes will be grouted with neat cement or concrete grout. Grouting procedures will follow requirements as set forth by the Wisconsin Administrative Code Chapter NR130, Section NR 130.06(1). After grouting activity has been completed, the drill rig will be removed from the site.

SITE RECLAMATION

Once the drill rig has been removed from the site, the area will be regraded to match its original contours. The Sedimentation Sump shall be filled in. Slopes will be graded to conform to the pre-existing topography.

In the event that any topsoil that had been stockpiled, it will be returned to the site and spread once regrading is completed.

All sites shall be seeded to establish vegetation. Composite soil samples will be collected. The samples will be submitted to the local agronomy center for available nutrient analysis. The analysis will provide a recommended fertilizer application rate.

Soil preparation may include raking, discing or harrowing to loosen the soil.

Based on Wisconsin Department of Transportation Seed Mix No. 20, the seeding mixture will consist of the following varieties:

- 6% Kentucky Bluegrass
- 24% Hard Fescue
- 40% Tall Fescue
- 30% Perennial Ryegrass

The seed mix is used locally on highway projects and is available from area suppliers.

Application rate shall be at 130.5 pounds per acre or 3.0 pounds per 1000 square feet.

Once fertilizer and seed have been applied, the seeded area will be raked, disked, harrowed or other methods in order to cover the seed.

Mulching material shall consist of straw or hay in an air-dry condition, wood excelsior fiber or wood chips. Mulch shall be spread at a thickness of ½ to 1-1/2 inches. Compacted bales are to be broken and loosened to create a loose blanket over the seeded area.

The pre-existing roads shall be graded and left in place for future use by the landowner. If the road is aggregate surfaced, grading will be performed to establish drainage towards the ditchline. Culverts will be left in place. If culverts are removed, berms will be created across the roadway to divert surface drainage off the roadbed.

293.13 (2)(b) Minimum standards for exploration, prospecting and mining shall include the following:

1. Grading and stabilization of excavation, sides and benches
All excavations shall be graded as to provide stable slopes.
2. Grading and stabilization of deposits of refuse;
Not Applicable. No refuse will be generated. Rock samples shall be removed from the site prior to reclamation activity.
3. Stabilization of merchantable by-products;
Not Applicable. No by-products will be generated. Rock samples shall be removed from the site prior to reclamation activity.
4. Adequate diversion and drainage of water from the exploration, prospecting or mining site;
Surface Runoff shall be diverted away from the drill site by means of ditches and/or earthen berms.
5. Backfilling;
Each drillhole shall be grouted with neat cement or fine concrete grout. Each drill site shall be backfilled as to remove any unstable slopes. The drill site shall be backfilled as to blend into the original contour that was in place prior to the exploration activity taking place.
6. Adequate covering of all pollutant-bearing minerals or materials;
Any pollutant-bearing minerals or materials identified will be isolated from exposure to water and atmosphere.
7. Removal and stockpiling, or other measures to protect topsoils prior to exploration, prospecting, or mining.
Topsoil is not anticipated to be encountered since the proposed activity will occur on previously disturbed areas. Any topsoil encountered will be isolated, removed and stockpiled.
8. Adequate vegetative cover;
Refer to the Abandonment Plan for details of applying vegetative cover.
9. Water Impoundment;
This program will use small sumps for providing drill water to the drilling machine. The sumps are in a closed loop in that the water from the drill is

returned to the sump for reuse. Start up water is transported to the site by trucks or by pipelines installed specifically for the drilling project.

10. Adequate screening of the prospecting or mining site.

Not Applicable. The activity is for an exploration site. However, the site is compact in size and located in a forested area approximately one mile from public roads.

11. Identification and prevention of pollution as defined in s. 281.01 (10) resulting from leaching of waste materials;

The drilling program is not anticipated to create waste materials or to cause leaching from waste materials. In the event that a waste material is identified that would create a leaching problem, that material will be removed from the site and disposed of in an approved disposal site.

12. Identification and prevention of significant environmental pollution.

Procedures will be made to identify sources of pollution to air, water and land. For example, stormwater techniques will be used to divert surface runoff away from the drilling activity. Any surface runoff into the drilling area will be diverted to sedimentation sumps prior to leaving the site. Drill cuttings will be disposed of by disposing in designated areas. Any toxic or hazardous wastes and other solid waste shall be disposed of into solid or hazardous waste facilities or otherwise in an environmentally friendly manner.

293.46 (2)(c) Minimum standards for reclamation of exploration sites, where appropriate, and for prospecting and mining sites shall conform to s.293.01 (23) and include provision for the following:

1. Disposal of all toxic and hazardous wastes, refuse, tailing and other solid waste in solid or hazardous waste disposal facilities licensed under ch.289 or 291 or otherwise in an environmentally friendly manner;

No toxic or hazardous wastes, refuse, tailing and other solid waste material are anticipated. If toxic or hazardous wastes, refuse, tailing or other solid waste material is identified, it will be disposed of in solid or hazardous waste disposal facilities or in an environmentally friendly manner.

2. Sealing off tunnels, shafts or other underground openings, and prevention of seepage in amounts which may be expected to create a safety, health or environmental hazard, unless the applicant can demonstrate alternative uses of tunnels, shafts or other

openings which do not endanger public health and safety and which conform to applicable environmental protection laws and rules.

Not Applicable. This Exploration Project will consist of drilling coreholes. No tunnels, shafts or other large openings will be made.

3. Management, impoundment or treatment of all underground or surface runoff waters from open pits or underground prospecting or mining sites so as to prevent soil erosion, flooding, damage to agricultural lands or livestock, wild animals, pollution of surface or subsurface waters or damage to public health or safety.

Not Applicable. No open pits or underground prospecting will be included within the Exploration activity.

4. Removal of all surface structures, unless they are converted to an alternative use.

Not Applicable. No surface structures are proposed within this Exploration activity.

5. Prevention or reclamation of substantial surface subsidence.

Not Applicable. No activity that would cause surface subsidence to occur is proposed.

6. Preservation of topsoil for purposes of future use in reclamation.

The majority of the Exploration Activity will occur on previously disturbed areas. Any topsoil encountered will be stockpiled for redistribution upon reclamation activity.

7. Revegetation to stabilize disturbed soils and prevent air and water pollution, with the objective of reestablishing a variety of populations of plants and animals indigenous to the area immediately prior to exploration, prospecting or mining.

Revegetation will occur after regrading and site preparation.

8. Minimization of disturbance to wetlands.

Not Applicable. The proposed Exploration Activity is to occur on previously disturbed areas.